CURRENT INDUSTRIAL REPORTS

Titanium Ingot, Mill Products, and Castings

SUMMARY FOR 1982

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U.S. Department of Commerce
BUREAU OF THE CENSUS
BUREAU OF INDUSTRIAL ECONOMICS

SUMMARY OF FINDINGS

The total production of titanium ingot for 1982 was 53.1 million pounds. This represented a 43-percent decrease from 92.5 million pounds produced in 1981. Consumption of titanium ingot decreased 37-percent from 87.2 million pounds in 1981 to 55.2 million pounds in 1982. Net shipments of titanium mill products decreased by 28-percent from 51.0 million pounds in 1981 to 36.6 million pounds in 1982. Castings shipments decreased 20 percent from 521.0 thousand pounds in 1981 to 419.0 million pounds in 1982. The statistics in this publication are based on a survey of manufacturers and represent total U.S. shipments of titanium ingot mill products and castings. Estimates are included for companies whose reports were not received in time for tabulation. A more complete description of this survey appears on page 5.

Table 1A. TITANIUM INGOT PRODUCTION, RECEIPTS, SHIPMENTS, CONSUMPTION, AND ENDING INVENTORIES: 1982

(Quantities in thousands of pounds)

Month and year	Production	Receipts	Shipments	Consumption	Ending inventories
Total[1]	53,072	8,670	8,492	55,161	(X)
January	6,452	955	1,363	6,222	6,523
February	6,505	1,252	973	6,202	6,686
March	6,858	1,071	867	7,320	6,552
April	5,001	806	769	5,204	6,405
May	3,610	670	456	4,480	3,994
June	4,017	588	653	4,631	5,411
July	3,284	542	528	3,118	5,634
August	3,877	589	466	3,676	5,884
September	3,392	498	846	3,407	5,579
October	3,598	534	671	3,829	5,386
November	3,444	532	595	4,058	4,707
December	3,034	633	305	3,014	5,068

See footnotes at the end of table 1B.

Table 1B. TITANIUM INGOT PRODUCTION, RECEIPTS, SHIPMENTS, CONSUMPTION, AND ENDING INVENTORIES: 1981

(Quantitiee in thousands of pounds)

Month and year	Production	Receipts	Shipments	Consumption	Ending inventories
Total[1]	92,471	24,155	20,352	87,184	(X)
January	8,056	2,113	1,550	8,892	3,779
February	7,202	1,901	1,696	6,740	4,753
March	8,304	1,935	2,277	8,261	3,584
April	8,798	1,920	2,151	7,609	4,879
May	7,493	2,016	1,774	6,729	5,268
June	7,478	1,943	1,769	7,088	4,616
July	6,712	1,745	1,712	4,480	4,021
August	8,609	1,470	1,135	8,940	4,972
September	8,208	2,536	1,980	7,686	5,580
October	8,029	2,937	1,945	7,855	6,577
November	6,245	1,882	1,303	6,043	6,412
December	7,537	1,757	1,060	6,861	7,184

(X) Not applicable.

[1]Total inventory figures are those shown for December.

Address inquiries concerning these figures to the U.S. Department of Commerce, Bureau of Industrial Economics, Office of Basic Industries, Washington, D.C., 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Nathaniel A. Shelton, (301) 763-2529.
For sale by Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233, or any U.S. Department of Commerce district office. Postage stamps not acceptable; currency submitted at sender's risk. Remittances from foreign countries must be by international money order or by a draft on a U.S. bank. Price, $1.50 per copy, $13.50 per year.

Table 2A. TITANIUM MILL PRODUCTS AND CASTINGS: 1982

(Quantities in thousands of pounds)

Product	Total	January	February	March	April	May	June	July	August	September	October	November	December
Mill products:													
Production	37,221	4,475	4,185	4,361	3,209	3,084	3,188	2,433	2,339	2,877	2,357	2,347	2,366
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	19,243	2,493	2,332	2,444	1,632	1,703	1,787	1,246	1,087	1,383	1,129	1,041	986
Rod and bar	4,100	443	416	312	440	423	228	274	341	359	329	208	327
Fastener stock and wire	588	77	72	82	67	64	60	24	23	67	14	19	19
Extrusions (other than tubing)													
Pipe and tubing	[1]13,290	[1]1,462	[1]1,365	[1]1,523	[1]1,070	[1]894	[1]1,113	[1]889	[1]888	[1]1,068	[1]885	[1]1,079	[1]1,054
Other													
Receipts	4,789	825	830	704	353	357	387	144	162	379	307	177	164
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	4,303	740	744	643	320	321	345	129	146	340	275	157	143
Rod and bar	-	-	-	-	-	-	-	-	-	-	-	-	-
Fastener stock and wire	-	-	-	-	-	-	-	-	-	-	-	-	-
Extrusions (other than tubing)													
Pipe and tubing	[1]486	[1]85	[1]86	[1]61	[1]33	[1]36	[1]42	[1]15	[1]16	[1]39	[1]32	[1]20	[1]21
Other													
Net shipments[2]	36,562	3,655	3,458	4,454	3,436	2,946	3,166	2,382	2,342	2,994	2,359	2,501	2,869
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	18,185	r1,707	r1,753	r2,302	1,910	r1,541	1,622	r1,222	1,099	1,329	1,110	r1,221	1,369
Rod and bar	4,166	612	417	444	313	269	353	273	322	359	310	181	333
Fastener stock and wire	551	r92	r69	r82	r73	r53	r52	29	r30	r71	(3)	(3)	(3)
Extrusions (other than tubing)													
Pipe and tubing	[1]13,660	r [1]1,244	r [1]1,219	[1]1,626	[1]1,140	[1]1,103	[1]1,139	[1]858	[1]891	[1]1,235	[1] [2]939	[1] [1]1,099	[1]1,167
Other													
Castings:													
Production[4]	797	77	83	90	69	59	64	61	60	36	52	72	74
Shipments	521	43	55	59	54	45	39	35	35	36	43	40	37

See footnotes at the end of table 2B.

Table 2B. TITANIUM INGOT, MILL PRODUCTS, AND CASTING: 1981

(Quantitites in thousand of pounds)

Product	Total	January	February	March	April	May	June	July	August	September	October	November	December
Mill products:													
Production	58,924	3,898	5,384	5,422	5,191	5,517	4,810	4,896	4,748	5,167	5,116	4,287	4,488
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	31,148	1,566	2,994	2,913	2,432	3,026	2,155	2,846	2,615	2,865	2,873	2,282	2,581
Rod and bar	8,053	866	744	745	776	789	722	549	566	635	512	645	504
Fastener stock and wire	1,024	159	142	130	89	80	77	55	70	49	47	62	64
Extrusions (other than tubing)													
Pipe and tubing	[1]8,699	[1]1,307	[1]1,504	[1]1,634	[1]1,894	[1]1,622	[1]1,856	[1]1,446	[1]1,497	[1]1,618	[1]1,684	[1]1,298	[1]1,339
Other													
Receipts	9,083	792	849	868	413	882	677	802	840	631	720	847	762
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	7,916	689	742	745	325	782	546	706	742	540	626	793	680
Rod and bar	-	-	-	-	-	-	-	-	-	-	-	-	-
Fastener stock and wire	-	-	-	-	-	-	-	-	-	-	-	-	-
Extrusions (other than tubing)													
Pipe and tubing	[1]1,167	[1]103	[1]107	[1]123	[1]88	[1]100	[1]131	[1]96	[1]98	[1]91	[1]94	[1]54	[1]82
Other													
Net shipments[2]	50,985	3,678	4,444	4,916	5,130	4,477	4,804	3,745	3,833	4,619	4,322	3,278	3,739
Sheet and strip	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plate													
Forging and extrusion billet	23,904	r1,258	r2,178	r2,417	r2,368	r2,114	r2,264	r1,793	r1,912	r2,296	r1,990	r1,410	r1,904
Rod and bar	7,857	840	686	724	772	789	730	539	492	635	522	632	496
Fastener stock and wire	1,216	r164	r152	r161	r98	r96	r109	r68	r90	r55	r59	r86	r78
Extrusions (other than tubing)													
Pipe and tubing	[1]18,008	r1,416	r1,428	r1,614	r1,892	r1,478	r1,701	r1,345	r1,339	r1,633	r1,751	r1,150	r1,261
Other													
Castings:													
Production[4]	674	51	45	51	55	53	65	66	59	60	44	49	76
Shipments	419	38	29	35	27	37	38	38	33	33	32	37	42

- Represents zero. rRevised by 5 percent or more from previously published figures.

[1]Data for sheet and strip, plate, extrusions (other than tubing), and pipe and tubing have been combined to avoid disclosing inidividual company data.

[2]Net shipments is the sum of mill products shipments plus mill products consumed in the manufacture of fabricated products, less total receipts.

[3]Data for fastener stock and wire is included with extrusions, pipe and tubing and other to avoid disclosing individual company data.

[4]Includes gross weight of castings before machining.

Table 3. SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1982

(Thousands of pounds)

Month and year	Manufacturers' net shipments (quantity)	Exports of domestic merchandise[1] [2]			Percent exports to manufacturers' net shipments (quantity)	Imports for consumption[1] [4]		Apparent consumption[6] (quantity)	Percent imports to apparent consumption (quantity)
		Quantity	Value at port	Estimated producers value[3]		Quantity	Value[5]		
TOTAL									
Total	45,054	7,200	100,606	97,901	16	2,166	22,269	40,020	5
Titanium ingot and forging and extrusion billet[7]	26,677	4,392	60,239	58,618	16	426	3,976	22,711	2
Titanium mill products	18,377	2,808	40,367	39,283	15	1,740	18,293	17,309	10
DECEMBER									
Total	r3,174	290	4,267	4,152	9	107	873	2,991	4
Titanium ingot and forging and extrusion billet[7]	r1,674	221	2,927	2,848	13	1	4	1,454	(Z)
Titanium mill products	1,500	69	1,340	1,304	5	106	869	1,537	7
NOVEMBER									
Total	r3,096	609	7,638	7,432	20	110	1,056	2,597	4
Titanium ingot and forging and extrusion billet[7]	r1,816	403	4,558	4,435	22	1	5	1,414	(Z)
Titanium mill products	1,280	206	3,080	2,997	16	109	1,051	1,183	9
OCTOBER									
Total	3,030	387	5,094	4,957	13	109	1,265	2,752	4
Titanium ingot and forging and extrusion billet[7]	1,781	137	2,175	2,116	r	12	194	1,656	1
Titanium mill products	1,249	250	2,919	2,841	20	97	1,071	1,096	9
SEPTEMBER									
Total	3,840	525	6,329	6,159	14	304	3,057	3,619	8
Titanium ingot and forging and extrusion billet[7]	2,175	162	2,556	2,487	7	9	101	2,022	(Z)
Titanium mill products	1,665	363	3,773	3,672	22	295	2,956	1,597	18
AUGUST									
Total	2,808	900	9,985	9,716	32	188	1,964	2,096	9
Titanium ingot and forging and extrusion billet[7]	1,565	482	6,022	5,860	31	59	503	1,142	5
Titanium mill products	1,243	418	3,963	3,856	34	129	1,459	954	14
JULY									
Total	2,910	413	5,603	5,453	14	211	1,875	2,708	8
Titanium ingot and forging and extrusion billet[7]	1,750	224	2,731	2,658	13	3	37	1,529	(Z)
Titanium mill products	1,160	189	2,872	2,795	16	208	1,838	1,179	18
JUNE									
Total	3,819	565	7,144	6,952	15	103	842	3,357	3
Titanium ingot and forgieg and extrusioo billet[7]	2,275	492	5,496	5,348	22	70	437	1,853	4
Titanium mill products	1,544	73	1,648	1,604	5	33	405	1,504	2
MAY									
Total	3,402	666	13,077	12,725	20	329	3,285	3,065	11
Titanium ingot and forging and extrusion billet[7]	1,997	439	9,165	8,918	22	106	1,011	1,664	6
Titanium mill products	1,405	227	3,912	3,807	16	223	2,274	1,401	16
APRIL									
Total	4,205	537	7,843	7,634	13	191	2,097	3,859	5
Titanium ingot and forging and extrusion billet[7]	2,679	376	5,066	4,930	14	71	538	2,374	3
Titanium mill products	1,526	161	2,779	2,704	11	120	1,559	1,485	8
MARCH									
Total	5,321	591	9,570	9,313	11	222	2,726	4,952	4
Titaoium ingot and forging and extrusion billet[7]	3,169	366	5,586	5,436	12	39	584	2,842	1
Titaoium mill products	2,152	225	3,984	3,877	10	183	2,142	2,110	9
FEBRUARY									
Total	4,431	734	11,456	11,148	17	187	1,911	3,874	5
Titaoium ingot and forging and extrusion billet[7]	2,726	433	6,037	5,875	16	25	194	2,318	11
Titanium mill products	1,705	301	5,419	5,273	18	162	1,717	1,556	10
JANUARY									
Total	r5,018	983	12,598	12,259	20	105	1,318	4,140	3
Titanium ingot and forging and extrusion billet[7]	r3,070	657	7,920	7,707	21	30	366	2,443	12
Titanium mill products	1,948	326	4,678	4,552	17	75	952	1,697	4

r Revised by 5 percent or more from previously published figures. (Z) Less than one-half of 1 percent.

[1] See table 5 for comparison of Standard Industrial Classification (SIC) codes, Schedule B export codes, and TSUSA import codes.

[2] Source: Bureau of the Census report FT-410, U.S. Exports--Schedule E--Commodity by Country.

[3] These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1981 which are published in Origin of Exports of Manufacturing Establishments, M81(AS)-5, appendix B. Comparable adjustment factors for earlier years are based on similar factors developed for 1971 and 1972. The current adjustment factor for this report is 0.9731.

[4] Source: Bureau of the Census report IM 145-X, U.S. Imports for Consumption and General Imports.

[5] The value includes c.i.f. (cost, insurance, and freight) at the first port of entry in the United States plus U.S. import duties and other charges to the import point.

[6] Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

[7] Comparability of output, export, and import classifications for ingot and billet assume that blown, sheet bar, and slab are reported as ingot on billet in the output codes. Figures for imports of ingot and billet also include powder, crystal, and similar forms which are excluded from the output and export codes.

Table 4. NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: 1981

(Thousands of pounds)

Month and year	Manufacturers' net shipments[1]	Exports of domestic merchandise[1]			Percent exports to manufacturers' net shipments	Imports for consumption[1] [4]		Apparent consumption[4]	Percent imports to apparent consumption
	(quantity)	Quantity[2]	Value at port[2]	Estimated producers' value[3]	(quantity)	Quantity	Value[3]	(quantity)	(quantity)
TOTAL									
Total	r71,337	12,098	159,454	155,165	17	2,719	27,234	61,959	4
Titanium ingot and forging and extrusion billet[7]	r44,256	8,405	105,647	102,805	19	488	5,221	36,341	1
Titanium mill products	27,081	3,693	53,807	52,360	14	2,231	22,013	25,618	9
DECEMBER									
Total	r4,799	957	14,087	13,708	20	119	1,264	3,961	3
Titanium ingot and forging and extrusion billet[7]	r2,964	778	10,842	10,550	26	40	382	2,226	2
Titanium mill products	1,835	179	3,245	3,158	10	79	882	1,735	5
NOVEMBER									
Total	r4,581	1,581	17,756	17,278	35	339	3,484	3,339	10
Titanium ingot and forging and extrusion billet[7]	r2,713	828	10,335	10,057	31	132	1,007	2,017	7
Titanium mill products	1,868	753	7,421	7,221	40	207	2,477	1,322	16
OCTOBER									
Total	r6,267	805	11,876	11,557	13	208	1,536	5,670	4
Titanium ingot and forging and extrusion billet[7]	r3,935	628	9,072	8,828	16	8	115	3,315	(Z)
Titanium mill products	2,332	177	2,804	2,729	8	200	1,421	2,355	8
SEPTEMBER									
Total	6,599	914	11,591	11,280	14	140	1,509	5,825	2
Titanium ingot and forging and extrusion billet[7]	4,276	586	8,004	7,789	14	4	78	3,694	(Z)
Titanium mill products	2,323	328	3,587	3,491	14	136	1,431	2,131	6
AUGUST									
Total	4,968	969	10,443	10,162	19	423	3,664	4,422	9
Titanium ingot and forging and extrusion billet[7]	3,047	763	7,335	7,138	25	87	756	2,371	3
Titanium mill products	1,921	206	3,108	3,024	11	336	2,908	2,051	17
JULY									
Total	5,457	1,012	14,214	13,831	19	206	2,273	4,651	4
Titanium ingot and forging and extrusion billet[7]	r3,505	726	10,100	9,828	21	53	598	2,832	2
Titanium mill products	1,952	286	4,114	4,003	15	153	1,675	1,819	8
JUNE									
Total	6,573	895	13,424	13,063	14	167	2,197	5,845	3
Titanium ingot and forging and extrusion billet[7]	4,033	626	8,269	8,047	16	21	285	3,428	1
Titanium mill products	2,540	269	5,155	5,016	11	146	1,912	2,417	6
MAY									
Total	r6,251	973	15,356	14,943	16	258	2,684	5,536	4
Titanium ingot and forging and extrusion billet[7]	r3,888	772	10,754	10,465	20	86	1,087	3,202	2
Titanium mill products	2,363	201	4,602	4,478	9	172	1,597	2,334	7
APRIL									
Total	7,281	978	14,423	14,035	13	247	1,462	6,550	4
Titanium ingot and forging and extrusion billet[7]	4,519	714	9,378	9,126	16	12	204	3,817	(Z)
Titanium mill products	2,762	264	5,045	4,909	10	235	1,258	2,733	9
MARCH									
Total	7,193	927	11,764	11,448	13	330	4,239	6,596	5
Titanium ingot and forging and extrusion billet[7]	r4,694	757	7,882	7,670	16	14	244	3,951	(Z)
Titanium mill products	2,499	170	3,882	3,778	7	316	3,995	2,645	12
FEBRUARY									
Total	r6,140	1,216	13,560	13,195	20	172	1,451	5,096	3
Titanium ingot and forging and extrusion billet[7]	r3,874	726	7,376	7,177	19	9	131	3,157	(Z)
Titanium mill products	2,266	490	6,184	6,018	22	163	1,320	1,939	8
JANUARY									
Total	r5,228	870	10,969	10,674	17	110	1,471	4,468	2
Titanium ingot and forging and extrusion billet[7]	r2,808	500	6,310	6,140	18	23	334	2,331	1
Titanium mill products	2,420	370	4,659	4,534	15	87	1,137	2,137	4

[r] Revised by 5 percent or more from previously published figures. (Z) Less than one-half of 1 percent.

[1] See table 5 for comparison of Standard Industrial Classification (SIC) codes, Schedule B export codes, and TSUSA import codes.

[2] Source: Bureau of the Census report FT-410, U.S. Exports--Schedule E--Commodity by Country.

[3] These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1981 which are published in Origin of Exports of Manufacturing Establishments, MB1(AS)-6, appendix B. Comparable adjustment factors for earlier years are based on similar factors developed for 1971 and 1972. The current adjustment factor for this report is 0.9731.

[4] Source: Bureau of the Census report IM 145-X, U.S. Imports for Consumption and General Imports.

[5] The value includes c.i.f. (cost, insurance, and freight) at the first port of entry in the United States plus U.S. import duties and other charges to the import point.

[6] Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

[7] Compersibility of output, export, and import classifications. For ingot and billet assume that blown, sheet bar, and slab are reported as ingot on billet in the output codes. Figures for imports of ingot and billet also include powder, crystal, and similar forms which are excluded from the output and export codes.

DESCRIPTION OF SURVEY

Scope of Survey—This survey covers companies engaged in producing titanium ingot, mill products, and castings.

Survey Methodology—The statistics in this publication are collected by mail on Bureau of the Census monthly Form ITA-991, Titanium Metal. The panel for this survey includes all known producers of titanium ingot, mill products, and castings, approximately 30 companies.

Survey Error—Figures for the current month include estimates for panel members for which reports were not received in time for tabulation. Such missing figures are "imputed" based on month-to-month movements shown by reporting firms. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is not precisely known but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increase as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

Revision to Previous Period Data—Data may be revised as the result of corrected figures received from respondents or other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

EXPLANATION OF TERMS

Gross Shipments of Mill Products—Represents mill shapes between producers plus mill shapes consumed in the production of fabricated products such as forgings.

Net Shipments of Mill Products—Represents gross shipments less receipts. For detail categories, net shipments also includes consumption in the manufacture of other mill shapes.

COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently and are based on somewhat differing systems of classification. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Aside from the differences in the basic commodity classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

Valuation—There are different methods of valuation for the three types of data:

Domestic Output—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

Exports—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

Imports—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

Duplication in Quantity and Value of Output—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

Estimated Low-Valued Export and Import Transactions—The import statistics include estimated value data for shipments valued under $251. Effective August 1982, value data for shipments valued under $251 are estimated from factors based on the ratios of under $251 shipments to individual country totals. Prior to August 1982, estimates were based on a 1-percent sample of documents for shipments valued under $251. Effective with the statistics for March 1979, the lower limit of the value ranges for estimating data for low-value export shipments was raised from $251 to $501. Effective July 1981, the statistics for countries other than Canada reflect fully compiled data for shipments valued over $500. Prior to July 1981, these data were fully compiled only for shipments valued $1,000 and over, while shipments valued $501 to $999 were estimated, based on a 50-percent sample.

Manufacturers' Shipments, Not Specified by Kind—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

Time Lag Between Output and Exports—There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

"Direct" vs "Total" Commodity Exports and Imports—Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

Used Commodities—With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

Geographic Area of Coverage—Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

HISTORICAL NOTE

Data on titanium metal have been collected by the Bureau of the Census since 1955. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library. A list of these libraries may be obtained from the Bureau of the Census regional offices:

Office	Telephone
Atlanta, Georgia	(404) 881-2271
Boston, Massachusetts	(617) 223-2327
Charlotte, North Carolina	(704) 371-6142
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A monthly Current Industrial Report also is published in this series. The Bureau of the Census publishes the following related reports:

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Other Industry Reports		
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(AS)	Annually	*Annual Survey of Manufactures (ASM)*
(MC)	Quinquennially	*Census of Manufactures*
Foreign Trade Reports		
EM 546	Monthly	*U.S. Exports—Schedule B—Commodity by Country*
IM 145-X	Monthly	*U.S. Imports for Consumption and General Imports*

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Manufacturers' Shipments, Inventories, and Orders	Kathleen Menth	(301) 763-2575
Census/ASM	Dale Gordon	(301) 763-7304
To order a Census publication	Customer Services (DUSD)	(301) 763-4100
Foreign Trade publication	Juanita Noone	(301) 763-5140
Bureau of Industrial Economics	James Manion	(202) 377-5157

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